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# Assessment of two designs for an Oral surgery Postoperative Leaflet

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#### ABSTRACT

Around the world it is considered good practice to provide patients with a postoperative instruction and advice leaflet following tooth extractions. It has never been reported whether the design or the content is effective or helpful for a patient's recovery. Aim: To assess the opinions of patients about two postoperative instructions leaflets with similar content but different designs. Materials and Method: A questionnaire was administered to 32 patients who had recently undergone oral surgery. The questionnaire asked patients about their satisfaction with the information and their overall opinion of two postoperative leaflet designs (a conventional and a daily planner design). Results: 53% of the patients preferred the daily planner leaflet for future patients. Conclusion: The results of this study suggest that patients find postoperative instructions leaflets to be helpful because they can help to guide patient to follow instructions after surgery. The daily planner was preferred because it was easy to review every day during recovery.

Keywords: oral surgery - postoperative instructions - leaflet - procedures

# Estudio comparativo aleatorizado de dos diseños de folletos postoperatorios de cirugía oral

#### RESUMEN

Alrededor del mundo es una buena práctica proporcionar a los pacientes un panfleto o folleto con instrucciones y consejos postoperatorios después de una cirugía bucal. Hasta la fecha no hay reporte sobre si el diseño o el contenido es efectivo o ayudó a los pacientes en su recuperación. Objetivo: Evaluar las opiniones de los pacientes sobre dos folletos de instrucciones postoperatorias con contenido similar pero diferentes diseños. Materiales y Método: Se administró un cuestionario a 32 pacientes que se habían sometido recientemente a cirugía bucal. El cuestionario preguntó a los pacientes sobre su satisfacción con la información y su opinión general de cada uno de los dos diseños de folletos postoperatorios (un diseño convencional y un diseño similar a una agenda o calendario). Resultados: El 53% de los pacientes prefirió el diseño de agenda/calendario y el 6,3% el modelo convencional. El 60% de los pacientes recomienda usar el folleto de agenda/calendario con futuros pacientes. Conclusión: Los resultados de este estudio sugieren que los pacientes encuentran útiles los folletos de instrucciones postoperatorias. Ya que pueden ayudar a guiar y seguir las instrucciones después de la cirugía. El calendario/agenda fue el preferido por ellos, ya que les resultó fácil revisarlo todos los días durante la recuperación.

Palabras clave: cirugía oral - postoperatorio - instrucciones - prospecto - procedimientos

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# INTRODUCTION

The second principle in the latest review of the British General Dental Council's (GDC) 9 principles for standard practice in the United Kingdom states that dentists must communicate effectively with their patients, specifying "You need to ensure that the patients have understood the information you have given them. After minor oral surgery (MOS), it is good practice to provide patients with a leaflet/pamphlet with instructions on how to care for their mouth during recovery".

Studies cited by Kessels and Alvira-Gonzalez report that 40 to 80% of medical information provided by healthcare practitioners is forgotten immediately. This could be the result of several factors including stress, level of education, age and the perceived importance or focus of the information provided<sup>2,3</sup>. Most patients prefer their own doctors to explain instructions rather than watching a pre-recorded video<sup>2</sup>. This explains why audiovisual alternatives such as pre-recorded videos have mixed results in patient compliance<sup>2-4</sup>. Communication should be consistent and effective, recognising patients' communication difficulties, using direct, specific instructions, graphics and pictographics, and avoiding professional jargon and acronyms<sup>1-4</sup>.

Most oral surgery postoperative leaflets follow the same conventional designs which have been used from the 1940s or even as early as the 1920s in the various options produced by modern institutions and science college <sup>5-8</sup>. This means that for the last 80 years, the same leaflet design has been used over and over<sup>5-8</sup>.

Motivated by the desire to increase patient compliance, reduce the risk of postoperative complications, and limit the number of patients phoning our hospital to seek clarification of or advice on the postoperative instructions, I have proposed a new leaflet based on other studies and psychological experiences.

# MATERIALS AND METHOD

This was a randomised comparative study on 50 patients who had recently undergone MOS. Based on their availability, patients were randomly assigned by the booking team to a specific MOS session that would provide two post-operative instructions leaflets: a conventional leaflet and a newly designed calendar/daily planner leaflet. This

was done independently of the patient's gender, age, type of procedure, type of anaesthetic (intravenous sedation or local anaesthetic) and medical history. Neither the booking team nor the staff in the surgical theatre were aware that the postoperative package included 2 different types of leaflets.

The conventional leaflet (Fig. 1) is a double-sided A4 sheet with portrait orientation containing information divided into sentences with specific instructions related to pain, swelling, bleeding, oral hygiene, diet, stitches, medication, rest, follow-up, contact instructions and a frequently asked question section for managing complications.

The calendar/daily-planner leaflet is a landscapeoriented A4 sheet folded in half like a booklet, providing four pages of content. The information is similar to that in the previous leaflet but distributed in the form of a calendar or daily planner, where instead of being divided into paragraphs, the instructions are divided by days as "dos and don'ts" during recovery, along with tips to keep in mind during each specific day or any complication that may arise (Fig. 2). The back of the leaflet shares space with the cover and provides further advice on how to deal with pain, and information on the relevance of early chewing function in relation to quality of life (Fig. 3). The models shown in Figures 1, 2 and 3 are coloured but the versions provided to the patients were in shades of grey.

Once the new leaflet model and questionnaire were approved by all Consultants and Nursing staff involved in the care of MOS patients, it was distributed to the patients along with the conventional leaflet model. Patients received both leaflets at the same time.

Two to three weeks later, a questionnaire was sent electronically to these patients so they could provide their opinion about each leaflet. The time between phases was to allow the patients to fully recover from their surgeries. The final intention of the questionnaire was to assess which leaflet made more impact and was more helpful during recovery. We did not assess information retention or compliance. A binomial test / chi square goodness of fit was used to test whether there was significant preference for one of the leaflets. Even with a small sample, the difference was statistically significant due to the disproportionate preference for one of the leaflets.



Fig. 1: Front and back content of the conventional leaflet.

ALCOHOL SHOULD BE AVOIDED FOR 24 HOURS AS IT MAY INCREASE BLEEDING
STITCHES can take up to three weeks to dissolve, if any stitches come out before dissolving please do not

Smoking greatly increases the risk of infection and slows the healing process it also increases the chance of localised bone infection, this is an extremely painful condition which can prove difficult to treat. DO NOT

meal and continued for 10 days. Corsodyl mouthwash can be used as an alternative.

The tooth socket may feel uneven or lumpy for the first few months, this is entirely normal

SMOKING AND ALCOHOL

SMOKE UNTIL THE WOUND HAS FULLY HEALED

be concerned unless the area begins to bleed.

#### Your Post Operation calendar Tick the box on each day task when done. 1st Day 2nd Day 3rd Day 4th & 5th Day 7th Day 10th Day DO DO DO DO DO DO ☐ Brush your teeth. ☐ Continue Oral hygiene Continue brushing and Continue brushing and ☐ Continue brushing ☐ You should be feeling Not the wound or the and on this day you rinsing your mouth rinsing your mouth and rinsing your back to normal. That stitches mouth after every can also rinse your after every meal. after every meal mean your recovery is mouth and spit gently. meal. complete. Continue pain relief. ☐ Take pain relief as Continue pain relief. advised by your nurse/Dr Continue pain relief. ☐ Start a normal diet Congratulations !! Continue to eat semi-Continue to eat soft including hard food if ☐ Have something to eat ☐ START to eat soft and and semisolid food as solid food as tolerated. tolerated. semisolid food as toltolerated Use Warms packs over Can start light sports. erated. ☐ Use cold packs over the the skin. skin. DON'T DON'T DON'T DON'T DON'T DON'T ☐ Don't spit or rinse your ☐ Don't smoke. □ Don't smoke. Don't smoke. □ Don't smoke. mouth. ☐ Don't do any sports □ Don't do any sports Don't do any sports. Don't take any pain □ Don't smoke. activities, hot food, activities, hot food, relief tablets unless drinks or hot showers drinks or hot showers. you are having pain. ☐ Don't do any sports activities, hot food, drinks ☐ After 24hours don't or hot showers. use cold packs over the skin anymore. ☐ Don't use straws. REMEMBER REMEMBER REMEMBER REMEMBER REMEMBER REMEMBER ☐ Swelling should start to ☐ Swelling should be ☐ The tooth socket may ☐ Today the swelling and ☐ Today its going to be reduce. gone by now. feel uneven for the painful, specially while more swollen, painful pain should reach its eating and brushing but and more uncomfortfirst few months. peak point. Do jaw exercises (open Do jaw exercises able. Bruises might you need to do it. (open and close to ☐ Still very uncomfortaand close to prevent ☐ Stitches can take 3-4 joint pain). prevent joint pain). weeks to dissolve ☐ You will have taste of ble. Be patient. Allow it No need to call unless completely. This should be the last to heal properly. it is too unbearable. day with blood taste.

Fig. 2: Daily planner / Calendar leaflet content and design.



Fig. 3: Front cover and back page of the calendar leaflet.

# **RESULTS**

Out of 50 patients who were invited to complete the questionnaire, 33 responded. The data were entered in a Microsoft Excel spreadsheet for analysis,

When asked which leaflet they found more helpful for their recovery, 54.5% (n=18) selected the calendar/daily planner leaflet, while only 6.0% (n=2) preferred the conventional leaflet. The remaining responses included 24.2% (n=8) who reported they did not read either leaflet and 15.2% (n=5) who stated both leaflets were the same (Table 1).

To assess whether the calendar leaflet was significantly preferred to the conventional design, a chi-square goodness-of-fit test was performed on the 20 patients who expressed a clear preference for either format. The test yielded  $\chi^2 = 12.80$ , p < 0.001, indicating a statistically significant preference for the calendar.

The second question of the survey was "Did you find the answer to every problem you had during recovery in the leaflets? And in which one?". The calendar/daily planner was the preferred answer with 42.4% (n=14), followed by "yes" on both with

24.2% (n=8), while 18.2% (n=6) felt that they did not have any problems during recovery, 9.1% (n=3) were unable to find the answer to their recovery problem in either leaflet, and only 6% (n=2) had their recovery issue resolved by the conventional leaflet only.

The following question was "Do you think the leaflet provides enough guidance to prevent you from calling our staff to ask a question? Which one was helpful for this?" Most of the patients reported that they did not have any problem during recovery 37.5% (n=12). Out of those who had some issues during their postoperative period, 34.4% (n=11) indicated the calendar/daily planner was their main source of answers during recovery, and only one patient (3.1%) said that they used the conventional leaflet for this. Finally, 15.6% (n=5) of the respondents said they were unable to find their answer and still had to contact the hospital for additional help. The remaining 9.3% (n=4) provided various or incomplete responses.

126 Gagliardi-Lugo AF

Table 1. Response summary of the questionnaire provided to the patients.				
Questions	Answers			
After your surgery, you were given 2 post op instruction leaflets. One was a long set of instructions with a Frequently Asked Questions section, and the other one was like a calendar. Which one did you find more helpful for your recovery?	The Calendar/day- planner model 54.5% (n=18)	Neither 39.4% (n=13)	Conventional model 6.1% (n=2)	
2) Did you find the answer to every problem you had during recovery on the leaflets? And in which one?	Yes, in the calendar leaflet 42.4% (N=14) Yes, in the Conventional model 6.1% (n=2)	Yes, in both 24.2% (n=8)	No / Didn't have any problem 18.2% (N=6)	No, couldn't find my answer 9.1% (n=3)
3) Do you think the leaflet guided you enough to prevent you from calling to as our staff a question? Which one was helpful for this?	No, because I didn't have any problems during recovery 37.5% (n=12)	Yes, the calendar was helpful enough. 34.4% (n=11)	Neither, I still needed to call for advice. 15.6% (n= 5)	Various answers 12.5% (n=5)
4) Between the 2 post op instruction leaflets, which one would you recommend we use for future patients?	Calendar leaflet 54.5% (n=18)	Neither 21.2% (n=7)	Both 18.2% (n=6)	Conventional model 6.1% (n=2)

Finally, the patients were asked to recommend one of the two postoperative instruction leaflets for us to use with future patients. In reply, 54.5% (n=18) recommended the calendar/daily-planner, while only 6.1% (n=2) recommended the conventional design. Other answers included Neither 21.2% (n=7) and Both 18.2% (n=6).

Space was provided after every question for patients to write comments related to each answer. Twenty-seven patients thought a leaflet helped them to retain and remember all the postoperative information provided and was helpful during recovery.

When asked why they chose the calendar/daily planner over the conventional leaflet, some of the comments were:

# **DISCUSSION**

A textbook for students on extraction of teeth written by S.S. Hornor in 1851 recommends giving postoperative instructions following an oral surgery

procedure, showing how important they are and how long they have been used. Although the book does not advocate the use of written information, it highlights the instructions and how the dentist should monitor the patient closely for the next 48 hours to ensure bleeding stops and pain is not increasing<sup>7</sup>.

The earliest leaflet I found during this investigation was in the American Dental Association (ADA) Library & Archives. It is a 4-page booklet published in 1920 and distributed by the "Library Bureau" (former name of the ADA library), called "Postoperative Instructions to Dental Patients"<sup>5</sup>. It is divided into 4 sections that explain the importance of rest, oral hygiene, diet, whether to use heat or cold and what to do in case of emergency. It also requests patients to contact the dentist's office on the first or second postoperative day to report progress of recovery<sup>5</sup>.

The next earliest pamphlet in the ADA Archives on this topic is called "What to Do After Extraction of a Tooth", dated 1957, and produced and distributed by the ADA Bureau of Dental Health Education. It is also a 4-page booklet that divides the information into 5 sections: rest, cold applications, bleeding, oral hygiene and diet<sup>8</sup>.

Current leaflets are structured similarly to those from the olden days. Most leaflets available online from dental societies or professional organisations such as the British Association of Oral Surgeons (BAOS)

<sup>&</sup>quot;Better layout"

<sup>&</sup>quot;It was good to guide me by the day".

<sup>&</sup>quot;Broken down, the information easier".

<sup>&</sup>quot;Easy to follow".

<sup>&</sup>quot;While I was recovering, I was able to look at the timetable, and it told me what to expect".

<sup>&</sup>quot;The other one had more information, but the timetable was an easy way to remind me of things". "It was easier to know what to do by the day".

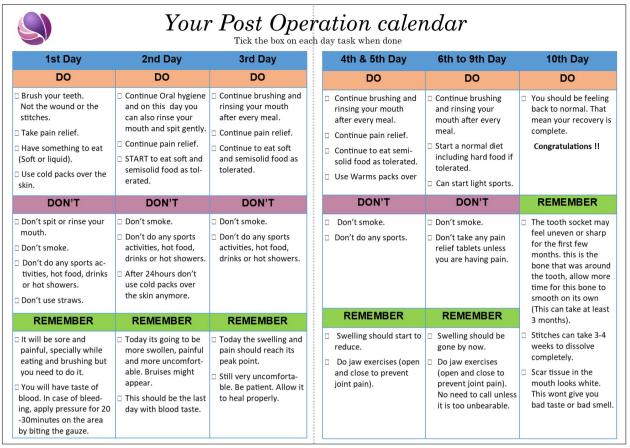


Fig. 4: Daily planner / Calendar leaflet added content after this investigation.

are similar, designed either as a 4-page booklet with 1- or 2-sided pages containing specific instructions and different items related to main topics as pain, bleeding, smoking, alcohol, emergency care, rest and oral hygiene<sup>6</sup>. The conventional leaflet used in this study has a similar structure.

Kim et al. (2020) assessed the quality of information in modern postoperative leaflets providing instructions for patients following minor oral surgery procedures. They concluded that most of them contained low-quality information lacking details of any risks or consequences if the instructions were not followed, and the impact of overall quality of life during recovery. Most of them do not include dates or cite the articles or sources that support their content. This is no surprise, as the text and the idea are almost 100 years old. Kim et al. suggest reformatting and improving the quality of the information provided to patients<sup>9</sup>.

The new calendar/daily-planner was designed considering smart use of space, a single sheet of paper, direct simple instructions, and a different layout that would easily guide the patient through recovery<sup>6,7,9</sup>.

With the purpose of complementing the information provided verbally, our leaflet follows design advice from authors such as Kessels, Akshaya and the GDC Guidelines, in direct, easy to understand language. Moreover, the calendar-style layout graphically guides patients through recovery. We did not include bibliographical references because we could not afford to sacrifice valuable space that could be used to provide more information to patients<sup>6,7,9</sup>.

A non-published internal survey in our department confirmed that the most common reason for which patients contact our department is pain, followed by trismus and infections, with bleeding coming last. Based on these results, the calendar/daily planner design includes the usual advice following oral surgery but also emphasises pain management, oral hygiene and early chewing function to ensure faster recovery, a principle applied in AOCMF maxillofacial trauma<sup>10</sup>.

Ravindra et al. (2012) highlight how efficacy within the British National Health Service is often achieved with simple, practical improvement to clinical practice, such as updating a preoperative leaflet into 128 Gagliardi-Lugo AF

simpler, more direct design and language, ensuring preoperative patient compliance for sedation<sup>11</sup>. Our own experience has confirmed that at least 34.4% of the patients that had problems during recovery were able to find a way to solve them, while 3.1% of the patients reported the same for the conventional design. Based on the free text feedback from patients and the phone call made after implementation of these new leaflets, a new daily planner was prepared

containing additional information (Fig. 4).

## **CONCLUSION**

The results of our study suggest that in practice, patients prefer shorter, more concise, more basic language leaflets that provide easy reading and simple instructions to follow each day during their recovery, reducing the chances of needing to contact the Hospital.

## **ACKNOWLEDGMENTS**

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## CONFLICT OF INTERESTS

The authors declare no potential conflicts of interest regarding the research, authorship, and/or publication of this article.

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